

CLAIMS:

1. A self-camming torque rod assembly for an endgate of a vehicle comprising:

a dual-pivot hinge assembly connected to the endgate and a vehicle body of the vehicle and having a dual pivot to allow the endgate to pivot to a first open position and a second open position and to a closed position relative to the vehicle body;

a roller rotatably connected to said dual-pivot hinge assembly; and

a self-camming torque rod to interface with said roller having a first portion for connection to the endgate and a second portion extending from the first portion and spaced from said roller when the endgate is in the closed position and cooperating with said roller when said endgate is moved between the closed position and the first open position and the second open position to counterbalance a weight of the endgate.

2. A self-camming torque rod assembly as set forth in claim 1 wherein said second portion comprises a first linear portion extending forwardly and upwardly from said first portion.

3. A self-camming torque rod assembly as set forth in claim 2 wherein said second portion further comprises a second linear portion extending rearwardly and upwardly from said first linear portion.

4. A self-camming torque rod assembly as set forth in claim 3 wherein said second portion further comprises a first arcuate portion interconnecting said first linear portion and said second linear portion.

5. A self-camming torque rod assembly as set forth in claim 4 wherein said second portion further comprises a third linear portion extending forwardly and upwardly from said second linear portion.

6. A self-camming torque rod assembly as set forth in claim 5 wherein said second portion further comprises a second arcuate portion interconnecting said second linear portion and said third linear portion.

7. A self-camming torque rod assembly as set forth in claim 1 wherein said dual-pivot hinge assembly comprises a body bracket for connection to the vehicle body of the vehicle and a universal bracket pivotally connected to said body bracket and for operative connection to the endgate and having said dual pivot.

8. A self-camming torque rod assembly as set forth in claim 7 wherein said universal bracket comprises a body portion extending generally vertically and forming a vertical axis and an endgate portion extending generally horizontally from said body portion and forming a horizontal axis.

9. A self-camming torque rod assembly as set forth in claim 8 wherein said universal bracket includes a hinge arm extending from said body portion and connected to said roller.

10. A self-camming torque rod assembly as set forth in claim 9 wherein said hinge arm includes a top wall and a pair of side walls spaced laterally and extending generally perpendicular from said side walls, said top wall having an aperture extending therethrough to receive said roller.

11. A self-camming torque rod assembly as set forth in claim 10 including a pin extending through said roller and said side walls to rotatably connect said roller to said side walls.

12. A vehicle comprising:

a vehicle body having a rear end with an opening;

an endgate disposed in said opening and operatively cooperating with said vehicle body to open and close said opening;

a dual-pivot hinge assembly connected to said endgate and to said vehicle body and having a dual pivot to allow said endgate to pivot to a first open position and a second open position and to a closed position relative to said door opening, said dual-pivot hinge assembly including a roller rotatably connected thereto; and

a self-camming torque rod having a first portion connected to said endgate and a second portion extending from said first portion and spaced from said roller when said endgate is in the closed position and cooperating with said roller when said endgate is moved between the closed position and the first open position and the second open position to counterbalance a weight of said endgate.

13. A vehicle as set forth in claim 12 wherein said second portion comprises a first linear portion extending forwardly and upwardly from said first portion.

14. A vehicle as set forth in claim 13 wherein said second portion further comprises a second linear portion extending rearwardly and upwardly from said first linear portion.

15. A vehicle as set forth in claim 14 wherein said second portion further comprises a first arcuate portion interconnecting said first linear portion and said second linear portion.

16. A vehicle as set forth in claim 15 wherein said second portion further comprises a third linear portion extending forwardly and upwardly from said second linear portion.

17. A vehicle as set forth in claim 16 wherein said second portion further comprises a second arcuate portion interconnecting said second linear portion and said third linear portion.

18. A vehicle as set forth in claim 12 wherein said dual-pivot hinge assembly comprises a body bracket for connection to the vehicle body of the vehicle and a universal bracket pivotally connected to said body bracket and for operative connection to the endgate and having said dual pivot.

19. A vehicle as set forth in claim 18 wherein said universal bracket comprises a body portion extending generally vertically and forming a vertical axis and an endgate portion extending generally horizontally from said body portion and forming a horizontal axis.

20. A vehicle as set forth in claim 19 wherein said universal bracket includes a hinge arm extending from said body portion and connected to said roller.

21. A vehicle as set forth in claim 20 wherein said hinge arm includes a top wall and a pair of side walls spaced laterally and extending generally perpendicular from said side walls, said top wall having an aperture extending therethrough to receive said roller.

22. A vehicle as set forth in claim 21 including a pin extending through said roller and said side walls to rotatably connect said roller to said side walls.

23. A vehicle comprising:
a vehicle body having a rear end with an opening;

an endgate disposed in said opening and operatively cooperating with said vehicle body to open and close said opening;

a dual-pivot hinge assembly comprising a body bracket connected to said vehicle body, a universal bracket pivotally connected to said body bracket and having a dual pivot to allow said endgate to pivot to a first open position and a second open position and to a closed position relative to said vehicle body, and a roller rotatably connected to said universal bracket; and

a self-camming torque rod cooperating with said roller to counterbalance a weight of said endgate having a first portion connected to said endgate and a second portion extending from said first portion comprising a first linear portion extending forwardly and upwardly from said first portion, a second linear portion extending rearwardly and upwardly from said first linear portion, a first arcuate portion interconnecting said first linear portion and said second linear portion, a third linear portion extending forwardly and upwardly from said second linear portion, and a second arcuate portion interconnecting said second linear portion and said third linear portion.